

Corrosion

Total Mark – 17

Question: 1

16 This question is about the corrosion of metals.

(a) A student investigates the rusting of iron.

Fig. 16.1 shows the experiments she sets up.

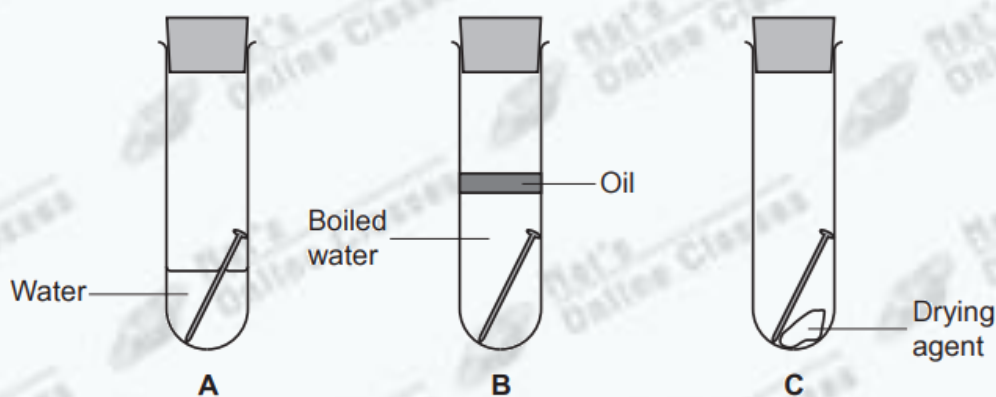


Fig. 16.1

Write about what the student would observe in each tube after one week.

Explain the observations.

Tube A

.....

Tube B

.....

Tube C

.....

[3]

- (b) Another student buys a new bicycle. The bicycle chain is made of iron.

The student decides to oil the chain to prevent it from rusting, as shown in **Fig. 16.2**.

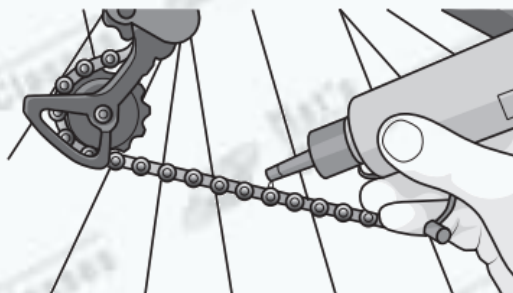


Fig. 16.2

Explain why oiling the chain will prevent the iron from rusting.

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..... [2]

- (c) A galvanised iron bucket is made of iron coated with a layer of zinc.

After years of use, the zinc coating has become scratched.

The iron below the zinc has been exposed but the iron has not rusted.

Explain why the iron has not rusted.

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..... [2]

Question: 2

23 This question is about metals and alloys.

(a) The table gives information about some alloys.

Alloy	Main metal or metals	Use
Brass	Musical instruments and coins
Bronze	Statues
Duralumin	Aircraft parts
Solder	Lead and tin	Joining metals
Steel	Iron	Bridges, cars

Complete the table.

Choose your answers from the list.

Aluminium and copper

Aluminium and iron

Copper and tin

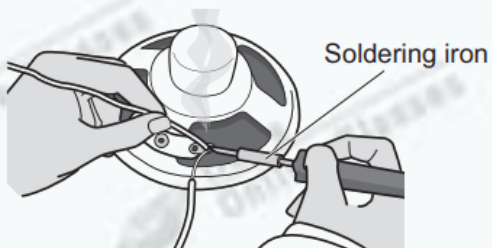
Copper and zinc

Copper and lead

Lead and zinc

[3]

(b) Solder can be used to join metals together. A hot soldering iron is used to melt the solder.



The table gives some information about solder, copper and tin.

Metal	Melting point (°C)	Density (g/cm ³)	Relative hardness
Copper	1085	8.96	Soft
Tin	232	7.31	Soft
Solder	130	10.3	Quite hard

Solder is better than copper or tin for joining metals together.

Suggest why. Use the information in the table.

.....
.....
..... [2]

(c) Steel is an alloy containing iron.

Complete the **word equation** for the corrosion of iron.

Iron + + → [2]

(d) (i) Iron can be plated with a layer of **zinc** to prevent it corroding.

This is called **galvanising**.

Explain how galvanising prevents iron from corroding.

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.....
..... [2]

(ii) Iron can also be plated with a layer of **tin** to prevent it corroding.

Describe a **disadvantage** of tin plating for preventing corrosion.

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..... [1]